CLAIMS

What is claimed is:

1. An apparatus, comprising:

a memory to store compressed color data and decompressed color data;

a decompressor arranged to receive the compressed color data from the memory and configured to generate the decompressed color data and store the decompressed color data in the memory;

a color space converter arranged to receive the decompressed color data from the memory and configured to perform a color space conversion on the decompressed color data to form converted color space data; and

a halftoning device arranged to receive the converted color space data and configured to perform a halftoning operation to generate halftone data.

2. The apparatus as recited in claim 1, wherein:

the decompressor includes a lossy decompressor.

3. The apparatus as recited in claim 2, wherein:

the compressed color data includes compressed RGB color data.

4. The apparatus as recited in claim 3, wherein:

the converted color space data includes a C plane ,a M plane, a Y plane, and a K plane.

5. The apparatus as recited in claim 4, wherein:

the lossy decompressor includes a JPEG decompressor.

6. The apparatus as recited in claim 5, further comprising:

a first DMA controller coupled between the memory and the JPEG decompressor and configured to control the transfer of the compressed color data and the decompressed color data between the JPEG decompressor and the memory; and

a second DMA controller coupled between the memory and the color space converter and configured to control the transfer of the decompressed color data between the memory and the color space converter.

7. The apparatus as recited in claim 1, wherein:

the compressed color data includes compressed RGB color data.

8. The apparatus as recited in claim 7, wherein:

the converted color space data includes a C plane ,a M plane, a Y plane, and a K plane.

9. The apparatus as recited in claim 8, wherein:

the decompressor includes a lossy decompressor.

10. The apparatus as recited in claim 1, further comprising:

a second decompressor arranged to receive compressed K plane data from the memory to generate decompressed K plane data, where the decompressor corresponds to a first decompressor and the memory includes a configuration to store the compressed K plane data and the decompressed K plane data.

11. The apparatus as recited in claim 10, wherein:

the first decompressor includes a lossy decompressor;

the second decompressor includes a lossless decompressor;

the color data includes RGB color data;

the converted color space data includes a C plane, a M plane, a

Y plane, and a K plane.

12. The apparatus as recited in claim 11, further comprising:

a merging device arranged to receive the decompressed K plane data and the K plane and configured to combine the K plane and the decompressed K plane data.

13. The apparatus as recited in claim 12, wherein:

the decompressed K plane data includes a first plurality of data elements; and

the K plane includes a second plurality of data elements.

14. The apparatus as recited in claim 13, wherein:

the merging device includes a configuration to select a largest of corresponding ones of the first plurality of the data elements and the second plurality of the data elements to generate a third plurality of data elements; and

the first decompressor includes a JPEG decompressor; and

the second decompressor includes a FX decompressor.

15. The apparatus as recited in claim 13, wherein:

the merging device includes a configuration to select a smallest, if greater than zero, between corresponding ones of the first plurality of the data elements and the second plurality of the data elements to generate a third plurality of data elements;

the first decompressor includes a JPEG decompressor; and

the second decompressor includes a FX decompressor.

16. The apparatus as recited in claim 13, wherein:

the merging device includes a configuration to select from the first plurality of data elements, if greater than zero, between corresponding ones of the first plurality of the data elements and the second plurality of the data

elements to generate a third plurality of data elements;

the first decompressor includes a JPEG decompressor; and

the second decompressor includes a FX decompressor.

17. The apparatus as recited in claim 13, wherein:

the merging device includes a configuration to select from the second plurality of data elements, if greater than zero, between corresponding ones of the first plurality of the data elements and the second plurality of the data elements to generate a third plurality of data elements;

the first decompressor includes a JPEG decompressor; and

the second decompressor includes a FX decompressor.

18. A method, comprising:

storing compressed color data in a memory;

loading the compressed color data into a decompressor from the memory;

generating decompressed color data from the compressed color data;

storing the decompressed color data in the memory;

loading the decompressed color data into a color space converter from the memory; and

performing a color space conversion on the decompressed color data to generate converted color space data.

19. The method as recited in claim 18, further comprising:

storing compressed K plane data in the memory;

loading the compressed K plane data into a second decompressor from the memory where the decompressor corresponds to a first decompressor;

generating decompressed K plane data from the compressed K plane data; and

storing the decompressed K plane data in the memory.

20. The method as recited in claim 19, wherein:

the compressed color data includes compressed RGB data;

the converted color space data includes a C plane, a M plane, a Y plane and a K plane.

21. The method as recited in claim 20, further comprising:

combining the decompressed K plane data and the K plane in a merging device.

22. An electrophotographic printer , comprising:

a photoconductor;

a photoconductor exposure system configured to form a latent electrostatic image on the photoconductor according to a drive signal;

a transition placement device coupled to the photoconductor exposure system and configured to provide the drive signal responsive to pulse codes;

a memory to store compressed color data and decompressed color data;

a decompressor arranged to receive the compressed color data from the memory and configured to generate the decompressed color data ;

a color space converter arranged to receive the decompressed color data from the memory and configured to perform a color space conversion on the decompressed color data to form converted color space data; and

a halftoning device arranged to receive the converted color space data and configured to perform a halftoning operation to generate the pulse codes.

23. The imaging device as recited in claim 22, wherein:

the compressed color data includes RGB data;

the converted color space data includes a C plane, a M plane, a Y plane, and a K plane; and

the decompressor includes a lossy decompressor.

24. The imaging device as recited in claim 23, further comprising:

a lossless decompressor arranged to receive compressed K plane data from the memory and to generate decompressed K plane data; and

a merge device configured to combine the decompressed K plane data and the K plane.

25. The imaging device as recited in claim 24, wherein:

the lossy decompressor includes a JPEG decompressor; and

the lossless decompressor includes a FX decompressor.

26. An electrophotographic printer, comprising:

a photoconductor drum;

a photoconductor exposure system configured to form a latent electrostatic image on the photoconductor according to a drive signal;

a pulse width modulator coupled to the photoconductor exposure system and configured to provide the drive signal responsive to pulse codes;

a memory to store compressed RGB data, decompressed RGB data, compressed K plane data, and decompressed K plane data;

a first decompressor arranged to receive the compressed RGB data from the memory and configured to generate the decompressed RGB data

a first DMA controller configured to control the transfer of the compressed RGB data and the decompressed RGB data between the memory and the first decompressor;

a second decompressor arranged to receive the compressed K plane data from the memory and configured to generate the decompressed K plane data;

a second DMA controller configured to control the transfer of the compressed K plane data and the decompressed K plane data between the memory and the second decompressor;

a color space converter arranged to receive the decompressed RGB data from the memory and configured to perform a color space conversion on the decompressed color data to form a C plane, a M plane, a Y plane, and a K plane;

a third DMA controller configured to control the transfer of the decompressed color data from the memory to the color space converter;

a merging device arranged to receive the decompressed K plane data and the K plane and configured to combine the decompressed K plane data and the K plane to form merged K plane;

a halftoning device arranged to receive the C plane, the M plane, the Y plane, and the merged K plane and configured to perform a halftoning operation to generate the pulse codes.

27. An electrophotographic printer, comprising:

a photoconductor drum;

a photoconductor exposure system configured to form a latent electrostatic image on the photoconductor according to a drive signal;

a pulse width modulator coupled to the photoconductor exposure system and configured to provide the drive signal responsive to pulse codes;

a memory to store a compressed C plane, a compressed M plane, a compressed Y plane, and a compressed K plane, a decompressed C plane, a decompressed M plane, a decompressed Y plane, and a decompressed K plane, compressed K plane data, and decompressed K plane data;

a JPEG decompressor arranged to receive the compressed C plane, the compressed M plane, the compressed Y plane and the compressed K plane from the memory and configured to generate the decompressed C plane, the decompressed M plane, the decompressed Y plane, and the decompressed K

plane;

a FX decompressor arranged to receive the compressed K plane data to generate the decompressed K plane data;

a merging device arranged to receive the decompressed K plane data and the decompressed K plane and configured to combine the decompressed K plane data and the decompressed K plane to form a merged K plane; and

a halftoning device arranged to receive the decompressed C plane, the decompressed M plane, the decompressed Y plane and the merged K plane and configured to perform a halftoning operation to generate the pulse codes.